

Varian, Inc.  
Vacuum Technologies

**MS40+**

Mono Stage  
Rotary Vane Pump

*Small Footprint  
High Capacity Roughing*



*Inspiring* Excellence

NOTICE: This document contains references to Varian. Please note that Varian, Inc. is now part of Agilent Technologies. For more information, go to [www.agilent.com/chem](http://www.agilent.com/chem).

 Agilent Technologies

# MS40+ Mono Stage Rotary Vane Pumps

Best  
performance  
in the smallest  
package!

## HIGHEST PERFORMANCES / SIZE RATIO

- Sophisticated Electronics and excellent mechanical design allow high capacity roughing and small footprint
- Base pressure below  $5 \times 10^{-2}$  mbar ( $3.75 \times 10^{-2}$  Torr)
- High pumping speed over a wide range, from atmosphere to 1 mbar (0.75 Torr)
- Inverter technology allows to manage pumping speed to more than 45 m<sup>3</sup>/h (26.5 cfm)

## INVERTER TECHNOLOGY

- Proven on-board electronics allows constant performance worldwide
- Truly universal voltage and frequency
- Inverter electronics enable tailoring pumping speed to each application
- Environmentally friendly and cost-effective due to reduced power requirements, low start up current (<10A) and standby mode



## APPLICATIONS

- Mass spectrometers including LC-MS/ICP-MS/ GC-TOF-MS, etc.
- Electron Microscopes
- Scientific Instrumentation

## INTERFACE CAPABILITIES

- I/O and RS232/RS485 enable adjustment of operating parameters simplifying system integration
- T-Plus software allows control of pump parameters via PC, improving uptime and reliability, and reducing maintenance costs

## WORLDWIDE SERVICE CAPABILITY

- Three levels of Product Support
  - 24h Advance Exchange
  - Factory Repair
  - Upgrade Programallow global coverage of service needs to maximize productivity and uptime
- International network of professional sales and application engineers
- Toll free telephone lines with native language representatives will assist you with Technical / Application / Order Processing / Engineering support

## SMALLEST DIMENSIONS

- The smallest single stage 40 m<sup>3</sup>/h pump in the market.  
297 x 418 x 225 mm (11.69 x 16.46 x 8.86 inches) including on-board electronics, integrated exhaust filter and oil return kit.
- Easier system integration
- Simple maintenance
- Allows smaller overall instrument design, therefore reducing costs

# Technical Specifications

## Features and Benefits



### Inverter Technology

- Low start up current (<10A)
- Reduced operating power requirements
- Single phase
- Truly universal voltage and frequency
- Ideally suited for steady and high gas throughput conditions

### Integrated Design including:

- Oil return kit
- Anti suck-back valve
- Exhaust filter

### Resulting in:

- Compactness
- Reduced costs
- Easier maintenance
- Higher reliability



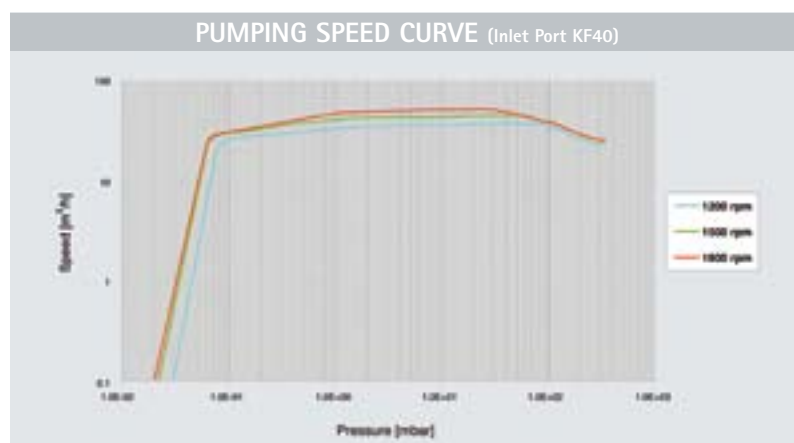
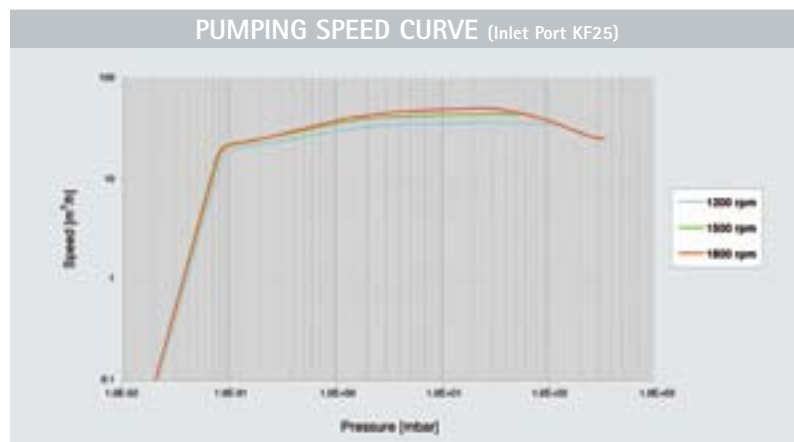
### Interface capabilities

- I/O and RS232 / RS485
- Adjustable speed: 40 - 60 Hz
- Tailored pump performance
- Adjustable acoustical signals
- Standby mode (low speed)

### Remote diagnostics

Allow the control of:

- oil level
- temperature
- power
- current



## TECHNICAL DATA

	RPM	UNITS	949-9225	949-9240	949-9241
Pumping Speed (at 5 mbar inlet pressure)	1450	m³/h	40	40	40
Ultimate Total Pressure		mbar	5x10 <sup>-2</sup>	5x10 <sup>-2</sup>	5x10 <sup>-2</sup>
Oil Capacity min/max		l	1	1	1
Motor Rating 3ph		kW	0.75	0.75	0.75
Noise Level with gas ballast closed		dB(A)	≤ 62	≤ 62	≤ 62
Oil Temperature		°C	60	60	60
Pump operating		°F	140	140	140
IP Value			20		
Installation category			II		
Pollution degree			2		
Operating Temperature Range		°C	12 - 40	12 - 40	12 - 40
Weight		Kg	33	33	33
		lb	72.7	72.7	72.7
Inlet Flange		DN	25KF	40KF	40KF
Exhaust Flange		DN	25KF	25KF	25KF
Main Dimensions:	- length	mm	418	418	418
	- width	mm	297	297	297
	- height	mm	228	228	228
Nominal Input Voltage		V	200-240	200-240	200-240
Input frequency		Hz	50 / 60	50 / 60	50 / 60
Max input power		VA	1200	1200	1200
Internal Main Fuse (TT type)		A	12.5	12.5	12.5

## ORDERING INFORMATION

MS40+	Part Number
MS40+ RVP, 25KF Inlet Flange, with I/O and RS232/485 Interface, without Oil Level Sensor	949-9225
MS40+ RVP, 40KF Inlet Flange, Full Optional with I/O and RS232/485 Interface, with Oil Level Sensor	949-9240
MS40+ RVP, 40KF Inlet Flange, Base Version	949-9241
ACCESSORIES	Part Number
MS40+ Exhaust filter	949-9201
MS40+ 1 Litre Oil Tank	949-9202
MS40+ Maintenance Kit	949-9203
Power cable EU	949-9396
208Vac US Power cable	949-9400
Power cable UK	949-9398
Power cable IEC320	949-9399
T-PLUS Navigator SW (w/serial cable)	969-9883

30%  
LOWER  
motor  
rating

20%  
LESS  
weight

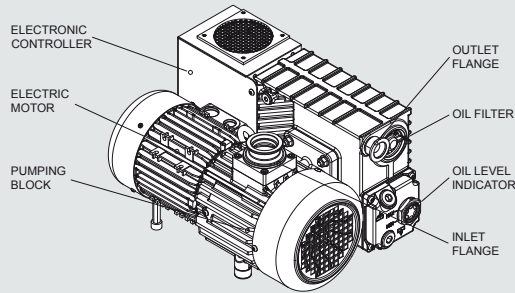
10%  
SMALLER  
dimensions

NOMINAL  
Pumping speed  
from 1 mbar to  
atmosphere

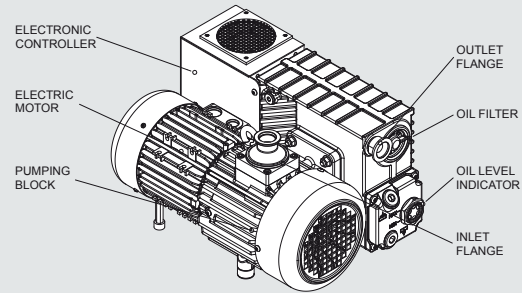
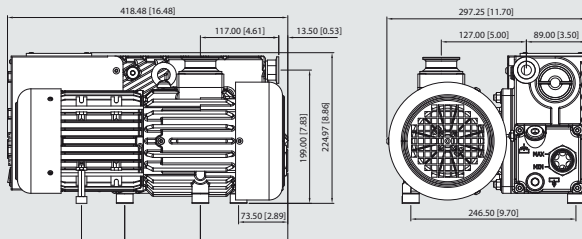
• Comparisons referred to published competitors' specifications

# MS40+ Mono Stage Rotary Vane Pumps

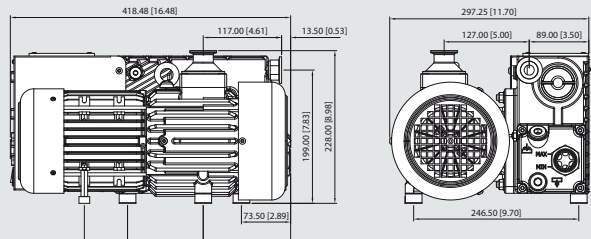
## OUTLINE DRAWINGS



INLET PORT KF40



INLET PORT KF25



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